

Remarks

The Office Action mailed April 28, 2005 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-20 are pending in this application. Claims 1-20 stand rejected. Claims 3 and 14-20 stand objected to. Claims 1, 3, 6, 10, 14, and 16 have been amended herein. Claims 2, 9, and 15 have been canceled herein.

The objection to Claims 3 and 14-20 under 37 C.F.R. § 1.75(a) is respectfully traversed. More specifically, Claim 3 has been amended to recite “counter-clockwise” and Claim 14 has been amended to recite “a combustor downstream from said compressor”. Claims 15-20 depend from independent Claim 14. For at least the reasons set forth above, Claims 3 and 14-20 are submitted as satisfying the requirements of 37 C.F.R. § 1.75(a). Accordingly, Applicants respectfully request the objection to Claims 3 and 14-20 under 37 C.F.R. § 1.75(a) be withdrawn.

The rejection of Claims 1, 4-8, 11-14, 16, 19, and 20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 2,967,224 (Irwin) is respectfully traversed.

Irwin describes a scroll type combustor assembly including a scroll case 52 having an air intake 50 and a gas discharge 51. Scroll case 52 houses an inner perforated flame tube 53 and has a geometry designed to maintain constant pressure at all points on the periphery of flame tube 53. Air from a compressor enters scroll case 52 through intake 50, spirals around in an annular space between flame tube 53 and scroll case 52, enters flame tube 53 through its perforations, dilutes hot combustion products within flame tube 53, and exits through discharge 51.

Claim 1 recites a method for assembling a gas turbine engine, wherein the method comprises “providing a combustor including a liner that defines a combustion chamber therein...coupling a casing within the gas turbine engine to extend circumferentially around the combustor liner, wherein the casing includes an inlet and a scroll duct that is coupled in

flow communication to the inlet and extends at least partially circumferentially around the liner...coupling the inlet in flow communication with a feed air source...and forming a plurality of openings extending through the combustor scroll duct for directing feed air circumferentially around the combustor liner to facilitate reducing thermal gradients induced within the liner.”

Irwin does not describe nor suggest a method for assembling a gas turbine engine as recited in Claim 1. For example, Irwin does not describe nor suggest forming a plurality of openings extending through a combustor scroll duct for directing feed air circumferentially around a combustor liner to facilitate reducing thermal gradients induced within the liner. Rather, in contrast to the present invention, Irwin describes a scroll type combustor assembly including a scroll case that houses an inner perforated flame tube, wherein air spiraling within the scroll case enters the flame tube through its perforations. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Irwin.

Claims 4 and 5 depend from independent Claim 1. When the recitations of Claims 4 and 5 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 4 and 5 likewise are patentable over Irwin.

Claim 6 recites a combustor for a gas turbine engine, wherein the combustor comprises “a liner defining a combustion chamber therein...and a casing extending circumferentially around said combustor liner, said casing comprising an inlet coupled in flow communication with a feed air source and a scroll duct coupled in flow communication with said inlet and extending at least partially circumferentially around said liner, said scroll duct comprising a first arcuate portion extending from said inlet and a second arcuate portion extending from said inlet, said first arcuate portion is a substantial mirror image of said second arcuate portion, wherein each of said first and second arcuate portions comprises a variable cross-sectional area.”

Irwin does not describe nor suggest a combustor as recited in Claim 6. For example, Irwin does not describe nor suggest a scroll duct including a first arcuate portion extending

from an inlet and a second arcuate portion extending from the inlet, wherein each of the first and second arcuate portions includes a variable cross-sectional area. Rather, Irwin describes a scroll case that includes only one arcuate portion that houses a flame tube and defines an annular space between the flame tube and the scroll case. For at least the reasons set forth above, Claim 6 is submitted to be patentable over Irwin.

Claims 7, 8, and 11-13 depend, directly or indirectly, from independent Claim 6. When the recitations of Claims 7, 8, and 11-13 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claims 7, 8, and 11-13 likewise are patentable over Irwin.

Claim 14 recites a gas turbine engine comprising “a compressor...and a combustor downstream from said compressor, said combustor comprising a liner defining a combustion chamber therein, and a casing extending circumferentially around said combustor liner, said casing comprising an inlet coupled in flow communication with said compressor, and a scroll duct coupled in flow communication with said inlet and extending at least partially circumferentially around said liner, wherein said scroll duct comprises a plurality of openings extending therethrough, said openings for channeling feed air around said combustor liner.”

Irwin does not describe nor suggest a gas turbine engine as recited in Claim 14. For example, Irwin does not describe nor suggest a scroll duct including a plurality of openings extending therethrough, wherein the openings are for channeling feed air around said combustor liner. Rather, in contrast to the present invention, Irwin describes a scroll type combustor assembly including a scroll case that houses an inner perforated flame tube, wherein air spiraling within the scroll case enters the flame tube through its perforations. For at least the reasons set forth above, Claim 14 is submitted to be patentable over Irwin.

Claims 16, 19, and 20 depend from independent Claim 14. When the recitations of Claims 16, 19, and 20 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claims 16, 19, and 20 likewise are patentable over Irwin.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. §102(b) rejection of Claims 1, 4-8, 11-14, 16, 19, and 20 as being anticipated by Irwin be withdrawn.

The rejection of Claims 1, 3, 6-8, 10, 13, 14, and 16-18 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,860,098 (Suenaga) is respectfully traversed.

Suenaga describes a combustor 10 for burning fuel. A bypass passage 90 is connected to one side of combustor 10 for supplying air thereto. An annular passage 61 is provided around combustor 10 and connected to bypass passage 90. Air supplied through bypass passage 90 passes within annular passage 61 in the circumferential direction, and is uniformly supplied into combustor 10 in the circumferential direction thereof through an opening 51 connecting combustor 10 and annular passage 61.

Claim 1 recites a method for assembling a gas turbine engine, wherein the method comprises “providing a combustor including a liner that defines a combustion chamber therein...coupling a casing within the gas turbine engine to extend circumferentially around the combustor liner, wherein the casing includes an inlet and a scroll duct that is coupled in flow communication to the inlet and extends at least partially circumferentially around the liner...coupling the inlet in flow communication with a feed air source...and forming a plurality of openings extending through the combustor scroll duct for directing feed air circumferentially around the combustor liner to facilitate reducing thermal gradients induced within the liner.”

Suenaga does not describe nor suggest a method for assembling a gas turbine engine as recited in Claim 1. For example, Suenaga does not describe nor suggest forming a plurality of openings extending through a combustor scroll duct for directing feed air circumferentially around a combustor liner to facilitate reducing thermal gradients induced within the liner. Rather, in contrast to the present invention, Suenaga describes an annular scroll surrounding a combustor having a plurality of openings therein, wherein air passing through an annular passageway in the annular scroll is supplied to the combustor through the

openings therein. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Suenaga.

Claim 3 depends from independent Claim 1. When the recitations of Claim 3 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 3 likewise is patentable over Suenaga.

Claim 6 recites a combustor for a gas turbine engine, wherein the combustor comprises “a liner defining a combustion chamber therein...and a casing extending circumferentially around said combustor liner, said casing comprising an inlet coupled in flow communication with a feed air source and a scroll duct coupled in flow communication with said inlet and extending at least partially circumferentially around said liner, said scroll duct comprising a first arcuate portion extending from said inlet and a second arcuate portion extending from said inlet, said first arcuate portion is a substantial mirror image of said second arcuate portion, wherein each of said first and second arcuate portions comprises a variable cross-sectional area.”

Suenaga does not describe nor suggest a combustor as recited in Claim 6. For example, Suenaga does not describe nor suggest a scroll duct including a first arcuate portion extending from an inlet and a second arcuate portion extending from the inlet, wherein each of the first and second arcuate portions includes a variable cross-sectional area. Rather, Suenaga describes an annular scroll having an annular passageway that does not appear to have a variable cross-sectional area. For at least the reasons set forth above, Claim 6 is submitted to be patentable over Suenaga.

Claims 7, 8, 10, and 13 depend, directly or indirectly, from independent Claim 6. When the recitations of Claims 7, 8, 10, and 13 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claims 7, 8, 10, and 13 likewise are patentable over Suenaga.

Claim 14 recites a gas turbine engine comprising “a compressor...and a combustor downstream from said compressor, said combustor comprising a liner defining a combustion

chamber therein, and a casing extending circumferentially around said combustor liner, said casing comprising an inlet coupled in flow communication with said compressor, and a scroll duct coupled in flow communication with said inlet and extending at least partially circumferentially around said liner, wherein said scroll duct comprises a plurality of openings extending therethrough, said openings for channeling feed air around said combustor liner.”

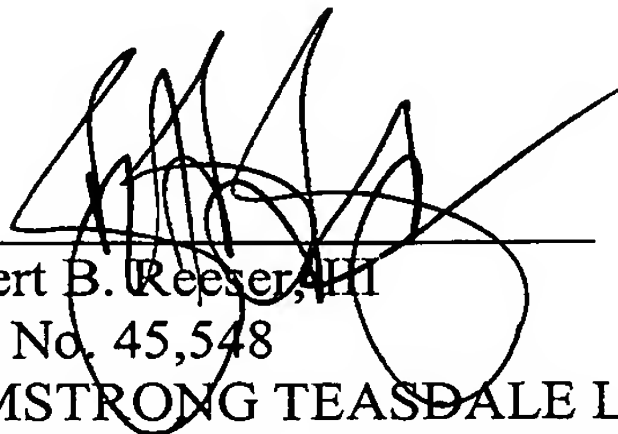
Suenaga does not describe nor suggest a gas turbine engine as recited in Claim 14. For example, Suenaga does not describe nor suggest a scroll duct including a plurality of openings extending therethrough, wherein the openings are for channeling feed air around said combustor liner. Rather, in contrast to the present invention, Suenaga describes an annular scroll surrounding a combustor having a plurality of openings therein, wherein air passing through an annular passageway in the annular scroll is supplied to the combustor through the openings therein. For at least the reasons set forth above, Claim 14 is submitted to be patentable over Suenaga.

Claims 16-18 depend from independent Claim 14. When the recitations of Claims 16-18 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claims 16-18 likewise are patentable over Suenaga.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. §102(b) rejection of Claims 1, 3, 6-8, 10, 13, 14, and 16-18 as being anticipated by Suenaga be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in the application are believed to be in condition for allowance. Favorable action is respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'R. B. Reeser, III', is written over a horizontal line.

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